Autopsy revealed a glio-sarcoma of the parietal lobe which invaded the frontal lobe and had involved, by a downward prolongation, the posterior part of the optic thalamus, the internal capsule, nucleus lenticularis and external capsule. Attention is especially directed to the spasmodic menacing movement by the appropriate word and the forced, almost mocking, smile, phenomena which belong to the domain of mimicry. Benaky reviews the case of Nothnagel wherein with preservation of voluntary contraction of the facial muscles there was inability to laugh. In this case, as in Gowers' case, there was destruction of the thalamus. On the other hand, Yimoucopoulo reported a case where, along with the facial paresis, there were spasmodic movements and continual forced laughter. In this case the autopsy showed a small cyst in the posterior portion of the thalamus. He thinks irritative lesions in this region may cause forced movements of the facial mimic muscles; destructive lesions, on the other hand, paralysis of the mimic movements of these muscles. This pathological gaiety was explained by Oppenheim and Eisenlohr as a consequence of an irritative lesion of the thalamus. Benaky presents his case as one due to irritative lesion.

3. *Two Cases of Merycism.*—Raviart and Caudron report two cases of merycism, the details of which are quite interesting, but no conclusions are drawn.

Wolfstein (Cincinnati).

JOURNAL OF MENTAL SCIENCE

(Vol. L., 1904, No. 211, October.)

1. Presidential Address on Paranoia. Sixty-third Annual Meeting Medico-Psychological Association. R. Percy Smith.
2. The Psychology of Hallucination. W. H. B. Stoddart.
3. Histological Studies on the Localization of Cerebral Functions. Alfred W. Campbell.
4. Educational Treatment of Young Epileptics. G. E. Shuttleworth.
5. Statistical Tables. Chas. A. Mercier.

1. *Presidential Address on Paranoia.*—In this address, which is a most able review of the whole subject, Smith traces the development of paranoia and contrasts its position in the psychiatric classifications of the various nations. He particularly emphasizes the conservative position of the English school on this subject, and shows most interestingly that even in the country of its origin there is no common agreement as to the connotation of paranoia. Smith's conclusions are as follows:

(1) The term "paranoia" is useful if it be limited to cases of chronic delusional insanity in which there are organized and systematized delusions, whether of persecution or exaltation, and whether these run separately, concurrently or by transformation from persecution to exaltation, and whether the disorder originates in childhood and youth (originäre paranoi), or later i nlife (tardive paranoia), and whether associated with heredity or not.

(2) In all these cases the importance of the affective element of mind must be ignored, and it is erroneous to use the term "paranoia" as implying primary intellectual disorder to the exclusion of, or prior to, disorder of "Affect."

(3) Allowing that there are acute cases in which delusions appear to be organized and systematized, and yet in which recovery seems to take place many of these cases are merely the initial phase of chronic delusional insanity with a remission of symptoms.

(4) If the incubus of the idea of primary intellectual disorder be got rid of, there is no difficulty in recognizing that some cases of paranoia may begin with an acute functional mental disorder of the nature of

melancholia or mania (as is indeed recognized even by those who take the primary intellectual view), or even may follow a delirious or confusional state.

(5) With this exception, acute confusional insanity (acute Verwirrheit) and acute delirious states (acute delirium, collapse-delirium, Erschöpfungs-delirium) should be regarded etiologically and clinically, and from the point of view of diagnosis and prognosis, as entirely apart from paranoid or chronic delusional insanity.

(6) Mercier's term "fixed delusion" should be used for states secondary to acute forms of insanity, where the persisting delusions are not organized or progressively systematized.

(7) With regard to terminal dementia in paranoia, it is trying to prove too much to say, as some authors do, that dementia does not ever supervene in this condition; and I think that Kraepelin's action in removing a large group of cases in which terminal weak-mindedness occurs from the domain of paranoia to that of dementia præcox is open to question. There seems to me a possibility that dementia præcox, with its hebephrenic, catatonic and paranoid forms, may become the new universal disease (Universalkrankheit), into which a large number of cases may be thrown, and which will give rise at no distant date to as much discussion as has attended Paranoia.

2. *The Psychology of Hallucination.*—The author calls attention to the points of dissimilarity between percepts, ideas, illusions, and hallucinations. Their points of resemblance are psychological, their points of difference are mainly physiological. Perception and ideation localize an object and give it a shape occupying a certain amount of space. Percepts and ideas are in reality only abstractions. The study of perception is, therefore, in reality but little more than the study of perception of space. In the visual domain, *e. g.*, the most obvious difference between perception, ideation, illusion and hallucination, is that while in perception and illusion there is a stimulus to the peripheral sense-organ (retina), in ideation and hallucination there is no such stimulus. In perception and illusion the stimulus to the angular gyrus arrives by way of the optic radiations, occipital lobe, and occipito-angular association fibres; in ideation and hallucination the stimulus reaches it by way of other association fibres than the occipito-angular bundle. This is evidenced by the existence of visual hallucination in the blind, auditory hallucination in the deaf, etc. In the visual hallucination there is a negative as well as a positive side to the process. The positive side is the seeing of the hallucination image; the negative side, failure to see neighboring objects. The interpretation of the negative part is that the neurones which normally conduct sensations from the retina are dissociated from each other. The positive side of the hallucination process is due to stimuli reaching the centre by way of association fibres other than those by which sensations are transmitted from the peripheral sense organ. Absence of sensations of other modalities than that affected favors the hallucinated state. The absence of other stimuli allows the affected sensory area to dominate consciousness. Hallucination depends, then, upon two factors, diminution of sensation and disturbance of association, which factors are of variable prominence.

Head has recorded cases in which hallucination was associated with the pain of visceral disease. Presuming that there was no anesthesia in these cases, Stoddart suggests that the continued painful sensations spread by way of association fibres to distant sensory areas of the cortex, giving rise to visual, auditory, and other hallucination. Charts are given showing marked analgesic areas of the disturbance (and, therefore, presumably anesthetic) in the insane. Stoddart suggests that epigastric and other allied sensations arise in those cases in which, owing to some affection of the cerebral cortex, there is some loss of sensation. When, therefore, any considerable part of the body is anesthetic, consciousness is dependent on the sensitive remainder. The sensitive remainder dominates consciousness, has "greatness thrust upon it." In the epigastric aura of epilepsy Stoddart reasons as follows: Loss of consciousness is the first symptom. It is said all sensation is lost because of the unconsciousness, but Stoddart thinks the patient becomes unconscious because he has lost all sensation. He suggests that the sensory defect begins at the periphery (arms and legs), and allows the epigastric sensitive remainder to dominate consciousness; hence the aura. The last event as the patient falls is the loss of epigastric sensation. The neural interpretation is the dissociation of neurones between the peripheral sense-organ and the cortical sensory centre. In conclusion Stoddart compares perception, ideation, illusion, and hallucination with regard to the manner in which in each process the cortical centre is stimulated. In perception, stimulus is transmitted from the periphery; there is neither *trans-cortical* association nor peripheral dissociation. In ideation the centre is stimulated by way of association fibres, but again there is no dissociation from the periphery. In illusion the centre is stimulated on the one hand by way of association fibres, and on the other from the periphery. The physiological difference between ideation and illusion is this, that the peripheral stimulus *does not interfere with* ideation, but is *necessary* to illusion. In hallucination there is trans-cortical association and peripheral dissociation. It differs essentially from perception, ideation, and illusion, in that the essential factors of hallucination is its negative factor.

3. *Localization of Cerebral Functions* (*Alfred W. Campbell*).—Campbell has made extended histological investigation into the structure of the cerebral cortex. He utilized normal and also pathological material. He also compared the cortex of two members of the anthropoid ape family and several of the lower animals. The brain harbors two varieties of centres: "primary," common to all animals and essential to survival, viz., centres for movement and common and special sensation; and "higher evolutionary," concerned in the higher psychic functions which distinguish man. The "motor" area is as easy to recognize histologically as experimentally. It is confined to the pre-central and does not spread to the post-central gyrus. It is mainly characterized by the giant cells of Betz. Proof of the pathological side is afforded by the findings in amyotrophic lateral sclerosis, and in the brains of individuals who have undergone amputations. The sulcus cruciatus of the lower orders is not the homologue of the Rolandic fissure. An isolated fissure on the posterior limb of the sigmoid gyrus forms a sharp histological boundary between the motor and what Campbell regards as a common sensory area. This he regards as the homologue of the Rolandic fissure, which is not a dividing line separating the motor area into halves, but the posterior boundary of the motor area. Motor representations are in three levels (Hughlings Jackson). Simple movements in the anterior cornual spinal cells; secondly, primary automatic movements of more complex type in the giant cells of the pre-central gyrus. Campbell places the third centre for skilled or higher evolutionary movements in a zone immediately adjoining the pre-central, called by him the "intermediate pre-central." It embraces two important centres for skilled movement: at its foot Broca's speech area, and above this the cheiro-kinesthetic centre for writing. This strip also contains a series of centres for skilled movements connected by commisural fibres, with the automatic simple centres in the pre-central gyrus. The rest of the frontal lobe is divisible into two areas, which are termed "frontal" and "pre-frontal." The pre-frontal subdivision is structurally extremely weak, and that it is so functionally is further proven by its electric inexcitability and by clinical experience. Histology supports the view that phylogenetically it is the very last pal-

lium to appear. The cortex, which is comprised under the "frontal" subdivision, is more extensive in man than in the ape. Campbell does not dispute Flechsig's doctrine that the frontal lobe must be a higher association centre, but accepts cautiously the evident support afforded by the atrophy in this region in cases of dementia, inasmuch as the cortex of the frontal lobe is built upon an extremely weak and collapsible framework of nerve fibres, especially when compared with the central gyri, occipital lobe and other parts. Cortex of the parietal lobe. Campbell "plumps" for the view that the post-central gyrus is the main terminus for common sensory impressions. Histologically the difference between the two gyri which are divided by the Rolandic fissure is even microscopically noticeable. Further, he advances in support of the sensory nature of the hinder gyrus, first, early medullation, as in the posterior tracts of the cord; second, the work on secondary degeneration of the cortical lemniscus (upper sensory neurone); and third, changes which he finds in the post-central gyrus in tabes, a disease as clearly restricted to the sensory neurones as amytrophic lateral sclerosis is to the motor.

Adjoining the "post-central" area proper, which may be regarded as a primary centre for the recognition of the simplest components of common sensation, is an area containing higher evolutionary "sensory centres," in which lesions may give rise to isolated disturbances of higher sensory components, *e. g.*, astereognosis, loss of muscle sense, etc., sensory components involving a higher psychic process. These are included in the "intermediate post-central area." Between this "sensory" area in front and the "visual" area is a vast area embracing Flechsig's posterior association area, an area in close anatomic relation with all forms of sensory components, both common and special.

This area is probably a field for the further elaboration and interpretation of impressions primarily received by the various sensory areas. In phylogenetic development the progressive increase in size of the frontal lobe, which Hitzig contended was proportionate to intellectual capacity, *is not more marked than a similar progressive increase in the expansion of the parietal lobe.* In upward evolution both frontal and parietal lobes undergo equal expansion. An interesting point made by Campbell is that in agenesis the parts most prone to suffer are those which are phylogenetically youngest. In three cases cited (idiots) all the motor and sensory centres were well developed, but the frontal gyri anterior to the pre-central and the parietal behind the post-central areas showed marked microgyria. The visual cortex is divisible into two areas; one follows closely the calcarine fissure (marked by the line of Gennari), and is probably the primary centre for visual impressions; the second, an investing area called the visuo-psychic, serves for further elaboration of these impressions. The primary auditory area Campbell locates in the transverse temporal gyri, while the audito-psychic centre corresponds in distribution to the well-known "word-hearing" centre. Two plates embodying these views accompany the paper.

4. Do not require reviewing.
5. Largely critical; not adapted for review.

WOLFSTEIN.

MISCELLANY

OPTIC NEURITIS AND FACIAL PARALYSIS. E. A. Shumway (Journal A. M. A., Feb. 11).

The author reports a case of post-papillitic optic atrophy with a history of prior right-sided facial paralysis with pain in jaw, and with a noticeable flattening of the right side of the face from loss of subcutaneous fat, together with enophthalmus, all on the right side, while the optic atrophy was bilateral, most marked on the left. He finds in literature